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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,724	04/21/2004	Lucy G. Hosking	15436.307.1	8563

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EXAMINER

BLEVINS, JERRY M

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/828,724

Applicant(s)

HOSKING, LUCY G.

Examiner

Jerry Martin Blevins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/21/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 20 and 27 are objected to because of the following informalities:

The "transimpedance amplifier" of claim 20 lacks antecedent basis.

Claim 28 is missing the appropriate preposition between the words "host" and "an".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-11, 13, 15-19, 21-23, and 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by International Publication to Aronson et al., number WO 02/063800 A1.

Regarding claim 1, Aronson teaches a transmitter optical assembly (TOSA 103, Figure 2) comprising: a transmitter substrate (100) that includes a power line (19) and a conductive path (as described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the TOSA of Aronson); a laser source mounted on the

transmitter substrate (again, described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the TOSA of Aronson); and a laser control (102) mounted on the transmitter substrate, the laser control communicably connected with one or more of the laser source, the power line, and the conductive path (Figure 2), the laser control comprising a memory portion (element 120, Figure 3, which gives greater detail to the control), the memory portion including one or more memory components for receiving or storing data (lines 4-18, page 4).

Regarding claim 10, Aronson teaches a receiver optical assembly (ROSA 102, Figure 2) comprising: a receiver substrate (100) that includes a power line (19) and a conductive path (as described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the ROSA of Aronson); a photodiode mounted on the receiver substrate (again, described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the ROSA of Aronson); an optical converter communicably connected with the photodiode, the optical converter for converting a received optical signal into an electrical signal (again, described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the ROSA of Aronson); and a processing control (102) mounted on the receiver substrate, the processing control communicably connected with one or more of the photodiode, the power line, and the conductive path (Figure 2), the processing control comprising a memory portion (element 120, Figure 3, which gives greater detail to the control), the memory portion including one or more memory components for receiving or storing data (lines 4-18, page 4).

Regarding claim 18, Aronson teaches a combination transmitter/receiver optical assembly (TOSA 103, ROSA 102, Figure 2) comprising: a combination transmitter/receiver substrate (100) that includes a power line (19) and a conductive path (as described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the TOSA/ROSA of Aronson); a photodiode mounted on the combination substrate, the photodiode configured to receive an optical signal from a fiber optic network (again, described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the TOSA/ROSA of Aronson); a laser source mounted on the combination substrate, the laser source configured to provide an optical signal to a fiber optic network (again, described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the TOSA/ROSA of Aronson); and a processing control (102) mounted on the receiver substrate, the processing control communicably connected with the laser source (Figure 2 and page 3, line 12 – page 4, line 3), the processing control comprising a memory portion (element 120, Figure 3, which gives greater detail to the control), the memory portion including one or more memory components for receiving or storing data (lines 4-18, page 4).

Regarding claim 19, Aronson teaches an optical converter communicably connected with the photodiode, the optical converter for converting a received optical signal into an electrical signal (page 3, line 12 – page 4, line 3).

Regarding claims 2, 22, and 23, Aronson teaches a laser modulator, the laser modulator administering an alternating current from the laser control to the laser source;

and a laser bias, the laser bias administering a direct current from the laser control to the laser source (all, page 8, lines 17-29).

Regarding claim 3, 17, and 27, Aronson teaches a ground line (18), a diagnostic data line (16), and a diagnostic clock (15).

Regarding claims 4 and 13, Aronson teaches that the conductive path is a transmission line that carries data from the host to the optical assembly, wherein the data are ultimately transmitted at the laser source, and that the conductive path is also a data receiving line that carries data from the receiver optical assembly to the host (page 3, line 12 – page 4, line 3).

Regarding claim 6, Aronson teaches a monitor photodiode, the monitor photodiode communicably connected with the laser source and the laser control, the monitor photodiode providing the laser control with status information about the laser source (page 3, line 12 – page 4, line 3 and page 7, lines 5-18).

Regarding claims 7, 15, and 25, Aronson teaches that the memory portion comprises one or more of EEPROM and a ROM (EEPROM 120).

Regarding claim 8, Aronson teaches that at least one of the memory components includes a portion that stores one or more of status and fault information, and operating temperature information (page 5, lines 12-23 and page 6, line 25 – page 7, line 18).

Regarding claims 9, 16, and 26, Aronson teaches that at least one of the one or more memory components includes a portion for receiving diagnostic data (page 7, lines 5-18).

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Regarding claim 11, Aronson teaches that the processing control comprises a temperature sensor (page 5, line 24 – page 6, line 2).

Regarding claim 21, Aronson teaches that the processing control comprises a postamp (104).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 14, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aronson in view of US Patent to Chen, number 5,337,396.

Regarding claims 5, 14, and 29, Aronson teaches the limitations of the base claims 1, 10, and 27, respectively. Aronson does not teach that the substrate comprises ceramic materials, wherein circuit traces on the ceramic materials include three-dimensional metallic sputtering to shield electromagnetic interference. Chen teaches a ceramic substrate with metallic sputtering (inherently three-dimensional) to shield electromagnetic interference (column 1, lines 38-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aronson with the ceramic substrate and metallic sputtering of Chen. The motivation would have been to protect the electronic components.

Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aronson in view of US Pre Grant Publication to Buss et al., number 2002/0196501.

Regarding claims 12 and 24, Aronson teaches the limitations of the base claims 10 and 18, respectively. Aronson also teaches a bias control mounted on the substrate, communicatively connected with the optical converter and the processing control (page 8, lines 17-29). Aronson does not teach that the optical converter is an avalanche photodiode. Buss teaches an avalanche photodiode used for converting an optical signal into an electrical signal (page 1, paragraph 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aronson with the avalanche photodiode of Buss. The motivation would have been to allow for electrical amplification of the signal (page 1, paragraph 4).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aronson in view of US Patent to Cohen et al., number 6,985,645.

Regarding claim 20, Aronson teaches the limitations of the base claim 18. Aronson does not teach a transimpedance amplifier. Cohen teaches a processing control communicably connected with a transimpedance amplifier (column 9, lines 12-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aronson with the transimpedance amplifier of Cohen. The motivation would have been to electrical amplification of the signal (column 9, lines 12-24).

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aronson in view of US Patent to Hamilton-Gahart et al., number 6,665,497.

Regarding claim 28, Aronson teaches the limitations of the base claim 27. Aronson does not teach an I2C or MDIO circuitry. Hamilton-Gahart teaches diagnostic data communicated to a processing control from a host by I2C circuitry (column 9, lines 8-16 and column 10, lines 20-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Aronson with the I2C circuitry of Hamilton-Gahart. The motivation would have been to provide status information for the converter (column 10, lines 20-30).

Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aronson in view of US Pre Grant Publication to Brezina et al., number 2003/0085452.

Regarding claim 30, Aronson teaches an optical transceiver (Figure 2) comprising a fiber optic subassembly (TOSA 103, ROSA 102) operably attached to the optical transceiver, the fiber optic subassembly comprising: one of a transmitter, a receiver, and combination transmitter/receiver substrate (100) including a power line (19) and a conductive path (page 3, line 12 – page 4, line 3); and means operably disposed within the fiber optic subassembly for communicating high frequency optical data, wherein the means for communicating optical data includes one or more conventional optical transceiver components within the fiber optic subassembly (Figure 2 and page 3, line 12 – page 4, line 3). Aronson does not explicitly teach that the

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impedance of the data is minimized by the transceiver components. Brezina teaches reducing impedance of high frequency data using transceiver components (page 4, paragraph 58). It would have been obvious to one of ordinary skill in the art at the time of the invention to minimize the impedance of high frequency data using transceiver components, as taught by Brezina, in the transceiver of Aronson. The motivation would have been to improve the transmission of the data.

Regarding claim 31, Aronson teaches a photodiode mounted on the combination substrate, the photodiode configured to receive an optical signal from a fiber optic network (again, described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the TOSA/ROSA of Aronson); a laser source mounted on the combination substrate, the laser source configured to provide an optical signal to a fiber optic network (again, described on page 3, line 12 – page 4, line 3 as regarding the prior art, this feature belonging also to the TOSA/ROSA of Aronson); and a processing control (102) mounted on the receiver substrate, the processing control communicably connected with the laser source (Figure 2 and page 3, line 12 – page 4, line 3), the processing control comprising a memory portion (element 120, Figure 3, which gives greater detail to the control), the memory portion including one or more memory components for receiving or storing data (lines 4-18, page 4).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Martin Blevins whose telephone number is 571-272-8581. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMB



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